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10/687,425	10/16/2003	Jeffrey Eldon Fish	KCX-838 (18843)	7967

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/687,425	FISH ET AL.	
	Examiner	Art Unit	
	ARADHANA SASAN	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *56-63,65-77 and 79-87* is/are pending in the application.

4a) Of the above claim(s) *77,79 and 80* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *56-63, 65-76, 81-87* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

1. The remarks, amendments, and Request for Continued Examination filed on 12/31/08 are acknowledged.

2. Claims 1-55, 64 and 78 were cancelled. Claims 56, 69-71, 73-75, 77 and 84 were amended. Claims 77 and 79-80 are withdrawn from consideration.

3. Claims 56-63, 65-76, and 81-87 are included in the prosecution.

Continued Examination under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/31/08 has been entered.

Response to Arguments

Rejection of claims 56-73 and 84-87 under 35 USC § 103(a)

5. In light of Applicants' cancellation of claim 64, the rejection with respect to this claim is rendered moot.

6. Applicants' arguments, see Page 7, filed 12/31/08, with respect to the rejection of claims 56-63, 65-73 and 84-87 under 35 USC § 103(a) as being unpatentable over Morman et al. (US 2002/0004350 A1) in view of Rohrbaugh et al. (US 2002/0151634 A1) have been fully considered but are not found persuasive.

Applicants argue that silica nanoparticles are formed from silica (SiO_2) and that, in contrast, Rohrbaugh discloses the use of silicate clay, specifically LAPONITE™, which is a synthetic layered silicate that resembles the smectite mineral hectorite in both structure and composition.

This is not persuasive because Rohrbaugh teaches that “inorganic nanoparticles are common to consumer applications. Inorganic nanoparticles generally exist as oxides, silicates, carbonates and hydroxides. Some ... inorganic metal oxides can be examples of nanoparticles" (Pages 5-6, [0046]). Rohrbaugh further teaches that "the inorganic metal oxides used in the composition may be silica- or alumina- based nanoparticles that are naturally occurring or synthetic” (Page 7, [0061]). Therefore, the limitation of the silica nanoparticles in amended claim 56 is taught by Rohrbaugh.

Applicants argue that the particles disclosed in Rohrbaugh certainly can not be said to inherently comprise a negative first Zeta Potential from about -1 to about -50 millivolts. Applicants argue that additionally, a second Zeta Potential being at least 5.0 millivolts higher would not be obvious from the disclosure of Rohrbaugh since the only mention of modifying nanoparticles is at ¶¶ [0066] - [0071] which disclose coating LAPONITE ™ with functionalized charged molecules in order to enhance sheeting/wetting of the treated surface.

This is not persuasive because Rohrbaugh teaches that “a sheet of an expandable layer silicate has a negative electric charge, and the electric charge is neutralized by the existence of alkali metal cations and/or alkaline earth metal cations” (Page 6, [0049]). Since Rohrbaugh also teaches that silica nanoparticles are examples of inorganic metal oxide nanoparticles used in consumer applications, one of ordinary

skill in the art would find it obvious that the electrical potential of the silica nanoparticles and the silicate nanoparticles will be comparable. Moreover, one of ordinary skill in the art would know that the zeta potential is the effective electrical charge of a particle, as evidenced by Edwards et al. in lines 28-29 of the Abstract (Biomedical Microdevices 3:3, 211-218, 2001). Therefore, one of ordinary skill in the art would know that since the silica nanoparticles have a negative surface electrical charge, these particles have a negative electrical potential or a negative zeta potential. It is this negative surface charge or negative zeta potential that allows the silica nanoparticles to be associated or modified by a positively charged metal ion such as Cu^{2+}, which is taught by Rohrbaugh (Page 8, [0069]). The limitation of the range of the negative first zeta potential (claims 34-35) would have been obvious given the desired association with a metal ion. The limitation of a second zeta potential that is higher than the first zeta potential would have been obvious because once a positively charged metal ion modifies the surface of the nanoparticle, the first negative zeta potential will consequently be higher, depending on the desired amount of modification or addition of positively charged metal ions.

Applicants argue that they modify the claimed nanoparticles in order to enhance adsorption of odorous compounds and that one of ordinary skill in the art would not be motivated to modify the "hydrophilic enhancing" treatment of LAPONITE ^{TM} disclosed in Rohrbaugh in order achieve an appropriate amount of metal ions adsorbed onto Applicants' claimed nanoparticles to sufficiently absorb targeted odors.

This is not persuasive because Rohrbaugh teaches coating compositions comprising a nanoparticle system and articles of manufacture that create multi-use

benefits to the modified surfaces including malodor control (Abstract and Page 5, [0043]).

Therefore the rejection of 10/08/08 is maintained.

Rejection of claims 76-77 and 81-83 under 35 USC § 103(a)

7. In light of Applicants withdrawing claim 77, the rejection with respect to this claim is rendered moot.

8. Applicants' arguments, see Page 9, filed 12/31/08, with respect to the rejection of claims 76-77 and 81-83 under 35 USC § 103(a) as being unpatentable over Morman et al. (US 2002/0004350 A1) in view of Rohrbaugh et al. (US 2002/0151634 A1) and Fernandez et al. (US 2001/0051189 A1) have been fully considered but are not found persuasive.

Applicants restate their arguments with respect to independent claims 56 and 84 above. The response to Applicants' arguments is stated above.

Applicants argue that Fernandez does not remedy the deficiencies of Morman and Rohrbaugh. Applicants submit that Fernandez fails to disclose nanoparticles comprising a positive zeta potential from about 1 to about 70 millivolts and that electrical charge may not be equated with Zeta Potential.

This is not persuasive because one of ordinary skill in the art would know that the zeta potential is the effective electrical charge of a particle, as evidenced by Edwards et al. in lines 28-29 of the Abstract (Biomedical Microdevices 3:3, 211-218, 2001).

Applicants argue that Fernandez is directed to pharmaceutical compositions and one of ordinary skill in the art would not look to pharmaceutical compositions useful for

the delivery of high molecular weight compounds in order to control odor in the personal absorbent articles.

This is not persuasive because Fernandez is combined with Morman and Rohrbaugh. The latter references provide the breathable film used in personal care garments and nanoparticle systems used in surfaces for malodor control respectively. One of ordinary skill in the art would use the breathable film that is used in a variety of personal care garments and protective garments, as suggested by Morman, combine it with the use of modified silica nanoparticles in coating polyolefin fibers that are used in disposable absorbent articles, as suggested by Rohrbaugh, further combine it with the positively charged nanoparticles, as taught by Fernandez, and produce the instant invention. One of ordinary skill in the art would choose from a finite number of predictable positively charged nanoparticles, such as the chitosan nanoparticles taught by Fernandez, with a reasonable expectation of success of producing a functional product that is a modified nanoparticle with a positive first Zeta potential.

Provisional rejection under obviousness type double patenting

9. In light of Applicants' cancellation of claim 64, the rejection with respect to this claim is rendered moot.

10. Applicants' arguments, see Page 11, filed 12/31/08, with respect to the provisional rejection of claims 56, 69-71, and 84-87 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31-32, 34, 36, 43, and 45 of copending Application No. 10/686,933 ('933 hereinafter), and the rejection of claims 56, 65-66, 69-71, and 84-87 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 6-9, 14-15, 17, 19-22, 25-26,

29-30 and 34-35 of US 7,141,518 have been fully considered. Applicants agree to submitting terminal disclaimers for the above references at a time when the present application is otherwise in condition for allowance.

Until such time, the obviousness-type double patenting rejections will be maintained.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 56-63, 65-73, and 84-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morman et al. (US 2002/0004350 A1) in view of Rohrbaugh et al. (US 2002/0151634 A1).

The claimed invention is a breathable film comprising a blend of a thermoplastic polymer, a filler, and nanoparticles. The nanoparticles have a diameter of about 500 nanometers or less and selected from the group consisting of silica, alumina, titanium dioxide, gold, zinc oxide, polystyrene, and combinations thereof. The nanoparticles are modified with a metal ion to form modified nanoparticles. The modified nanoparticles comprise a negative first Zeta Potential from about -1 to about - 50 millivolts and a second Zeta Potential being at least about 5.0 millivolts higher than the negative first Zeta Potential.

Morman teaches a breathable film that is used in a variety of personal care garments and protective garments (Abstract). Morman defines the term "breathable film" as a film having a water vapor transmission rate ("WVTR") of at least about 500 grams/m^2 – 24 hours (Page 2, [0017]). Morman discloses that the term "film" refers to a thermoplastic film and includes films rendered microporous by mixing polymer with filler, forming a film from the mixture, and stretching the film (Page 3, [0023]). Morman also teaches laminates that are breathable to water vapor but substantially impermeable to liquid water are used in diaper backings and other personal care absorbent garments (Page 1, [0002]). Thermoplastic polymers such as polyolefins are disclosed (Page 4, [0042]). Filler particles including calcium carbonate, silica and alumina are disclosed (Page 5, [0049]). Example 1 discloses a film where the core layer contained 58% by weight of stearic acid coated calcium carbonate particles having a mean diameter of about 1 micron and a top cut of 7 microns (Page 9, [0088]).

Morman does not expressly teach nanoparticles blended with the thermoplastic polymer and filler.

Rohrbaugh teaches coating compositions comprising a nanoparticle system and articles of manufacture that create multi-use benefits to the modified surfaces including malodor control (Abstract). The soft surfaces that are coated include fabrics, such as nonwoven fabrics, garments, textiles and films (Page 2, [0025]). The soft surfaces may comprise fibers from mineral sources such as polyolefin fibers (Page 2, [0026]). Nonwoven fabrics are disclosed (Page 3, [0030] to [0031]). The nanoparticle diameter can be between 0nm and 750nm (Page 5, [0044]). It is also disclosed that inorganic nanoparticles generally exist as silicates (Page 5, [0046]). Surface molecules can be

associated with surfaces of the nanoparticles (Page 5, [0045]). The surface of the nanoparticles may be "functionalized" by the association with charged functionalized surface molecules including multi-valent inorganic salts (such as salts of Cu^{+2}) (Page 8, [0069]). It is also disclosed that "the materials that have been subjected to a high energy surface treatment and have a plurality of nanoparticles deposited thereon can be suitable for a great many uses including, but not limited to use to transport liquid in articles such as clothing containing hydrophobic or borderline hydrophilic fibers and in portions of disposable absorbent articles" (Page 14, [0139]). Examples 14-15 and 20-21 include nanoparticle coating compositions (Page 19, Tables 2 and 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a breathable film that is used in a variety of personal care garments and protective garments, as suggested by Morman, combine it with the use of modified silica nanoparticles in coating polyolefin fibers that are used in disposable absorbent articles, as suggested by Rohrbaugh, and produce the instant invention.

One of ordinary skill in the art would do this because Rohrbaugh teaches that articles of manufacture comprising a nanoparticle coating have multi-use benefits to the modified surfaces including malodor control (Abstract).

Regarding instant claim 56, the limitation of a breathable film would have been obvious over the breathable film taught by Morman (Abstract). The limitation of a blend of a thermoplastic polymer, a filler, and nanoparticles would have been obvious over the thermoplastic films made by mixing a thermoplastic polymer with filler, as taught by Morman (Page 3, [0023]) in view of the nanoparticle coating of soft surfaces such as

polyolefin fibers, as taught by Rohrbaugh (Page 2, [0026]). The limitation of the diameter of the nanoparticles (500nm) would have been obvious over the nanoparticle diameter between 0nm and 750nm, as taught by Rohrbaugh (Page 5, [0044]). The limitation of the nanoparticles selected from the group consisting of silica, alumina, titanium dioxide, gold, zinc oxide, polystyrene, and combinations thereof would have been obvious over the silicate nanoparticles taught by Rohrbaugh (Page 5, [0046]). The limitation of the nanoparticles modified with a metal ion would have been obvious over the surface of the nanoparticles that may be "functionalized" by the association with charged functionalized surface molecules including multi-valent inorganic salts, as taught by Rohrbaugh (Page 8, [0069]). The limitation of the modified nanoparticles comprising a negative first Zeta Potential from about -1 to about - 50 millivolts and a second Zeta Potential being at least about 5.0 millivolts higher than the negative first Zeta Potential would have been obvious over the silica nanoparticles taught by Rohrbaugh (Page 5, [0046]) because silica nanoparticles have a negative surface charge (Rohrbaugh, Page 6, [0049]) and therefore have a negative electrical potential or zeta potential. It is this negative surface charge or negative zeta potential that allows the silica nanoparticles to be associated or modified by a positively charged metal ion such as Cu^{2+}, which is taught by Rohrbaugh (Page 8, [0069]). The limitation of the range of the negative first zeta potential (claims 34-35) would have been obvious given the desired association with a metal ion. The limitation of a second zeta potential that is higher than the first zeta potential would have been obvious because once a positively charged metal ion modifies the surface of the nanoparticle, the first negative zeta potential will consequently be higher, depending on the desired amount of modification

or addition of positively charged metal ions. Rohrbaugh teaches that “inorganic nanoparticles are common to consumer applications. Inorganic nanoparticles generally exist as oxides, silicates, carbonates and hydroxides. Some ... inorganic metal oxides can be examples of nanoparticles" (Pages 5-6, [0046]). Rohrbaugh further teaches that "the inorganic metal oxides used in the composition may be silica- or alumina- based nanoparticles that are naturally occurring or synthetic” (Page 7, [0061]). Therefore, the limitation of the silica nanoparticles in amended claim 56 is taught by Rohrbaugh.

Regarding instant claims 57-58, the limitations of the filler comprising at least 35% by weight of the breathable film and the filler comprising from about 45% to about 65% by weight of the breathable film would have been obvious over the 10-55% by volume of the filler, as taught by Morman (Page 11, claim 10). One with ordinary skill in the art would convert the % by volume of the filler into % by weight of the filler (based on the density of the filler) during the process of routine experimentation.

Regarding instant claim 59, the limitation of the average particle size of the filler of about 0.1 microns to about 10 microns would have been obvious over the mean particle diameter of the filler particles of about 0.1-7.0 microns, as taught by Morman (Page 5, [0049]).

Regarding instant claim 60, the limitation of the filler coated with a fatty acid would have been obvious over the stearic acid coated calcium carbonate particles, as taught by Morman (Page 9, Example 1, [0088]).

Regarding instant claims 61-62, the limitation of the filler would have been obvious over the fillers such as calcium carbonate, non-swellable clays, silica, alumina, barium sulfate, etc., as taught by Morman (Page 5, [0049]).

Regarding instant claim 63, the limitation of the negative first zeta potential of the nanoparticles from about -1 to about -20 millivolts would have been obvious over the silica nanoparticles taught by Rohrbaugh (Page 5, [0046]) because silica nanoparticles have a negative surface charge (Rohrbaugh, Page 6, [0049]) and therefore have a negative electrical potential or zeta potential. It is this negative surface charge or negative zeta potential that allows the silica nanoparticles to be associated or modified by a positively charged metal ion such as Cu^{2+}, which is taught by Rohrbaugh (Page 8, [0069]). The limitation of the range of the negative first zeta potential of about -1 to about -20 millivolts would have been obvious given the desired association with a metal ion.

Regarding instant claims 65-66, the limitation of the metal ion would have been obvious over the Cu^{+2} used on the surface of the nanoparticles as taught by Rohrbaugh (Page 8, [0069]).

Regarding instant claims 67-68, the limitation of the WVTR of the breathable film would have been obvious over the breathable film having a water vapor transmission rate ("WVTR") of at least about 500 grams/m^2 – 24 hours, as taught by Morman (Page 2, [0017]).

Regarding instant claims 69-71, the limitation of the surface area of the nanoparticles would have been obvious over the nanoparticles with a diameter between

0nm and 750nm, as taught by Rohrbaugh (Page 5, [0044]). The surface area is an inherent property of the nanoparticle and since the diameter of the nanoparticles is taught, the surface area of the nanoparticle is implicitly taught by Rohrbaugh. One with ordinary skill in the art would be able to calculate the surface area of the nanoparticles when the diameter of the nanoparticles is known.

Regarding instant claim 72, the limitation of a polyolefin as the thermoplastic polymer would have been obvious over the thermoplastic polymers such as polyolefins, as disclosed by Morman (Page 4, [0042]).

Regarding instant claim 73, the limitation of metal ions adsorbed onto the nanoparticles would have been obvious over the Cu^{+2} used on the surface of the nanoparticles as taught by Rohrbaugh (Page 8, [0069]).

Regarding instant claims 84-87, the limitation of a personal care product would have been obvious over the disposable absorbent articles taught by Rohrbaugh (Page 14, [0139]) and by the personal care absorbent articles and protective garments such as disposable diapers taught by Mormon (Page 1, [0007]). The limitation of a nonwoven fabric laminated to the film would have been obvious over the non-woven web that is bonded to the breathable film, as taught by Mormon (Page 1, [0006]).

13. Claims 74-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morman et al. (US 2002/0004350 A1) in view of Rohrbaugh et al. (US 2002/0151634 A1) and Thunhorst et al. (US 2002/0022672 A1).

The teachings of Morman and Rohrbaugh are stated above.

Morman and Rohrbaugh do not expressly teach the bonding of metal ions to the nanoparticles or the coupling of metal ions to the nanoparticles with an organofunctional silane.

Thunhorst teaches that the surface of silica nanoparticles can be treated with organosilanes, which are capable of attaching to the surface of the particles by a chemical bond or by a strong physical bond (Page 6, [0094]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a breathable film that is used in a variety of personal care garments and protective garments, as suggested by Morman, combine it with the use of modified silica nanoparticles in coating polyolefin fibers that are used in disposable absorbent articles, as suggested by Rohrbaugh, further combine it with the surface treatment of silica nanoparticles with organosilanes, as taught by Thunhorst, and produce the instant invention.

One of ordinary skill in the art would do this because Thunhorst teaches that organosilanes are preferred for surface treatment of silica nanoparticles (Page 6, [0094]).

Regarding instant claims 74-75, the limitation of the bonding of metal ions to the nanoparticles and the coupling of metal ions to the nanoparticles with an organofunctional silane would have been obvious over the surface treatment of silica nanoparticles with organosilanes, which are capable of attaching to the surface of the particles by a chemical bond or by a strong physical bond, as taught by Thunhorst (Page 6, [0094]).

14. Claims 76-77 and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morman et al. (US 2002/0004350 A1) in view of Rohrbaugh et al. (US 2002/0151634 A1) and Fernandez et al. (US 2001/0051189 A1).

The teachings of Morman and Rohrbaugh are stated above.

Morman and Rohrbaugh do not expressly teach a positive first Zeta potential of the modified nanoparticles.

Alonso Fernandez teaches nanoparticles with a positive electrical charge (Page 4, claims 1-2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a breathable film that is used in a variety of personal care garments and protective garments, as suggested by Morman, combine it with the use of modified silica nanoparticles in coating polyolefin fibers that are used in disposable absorbent articles, as suggested by Rohrbaugh, further combine it with the positively charged nanoparticles, as taught by Alonso Fernandez, and produce the instant invention.

One of ordinary skill in the art would do this because one of ordinary skill in the art would choose from a finite number of predictable positively charged nanoparticles, such as the chitosan nanoparticles taught by Alonso Fernandez, with a reasonable expectation of success of producing a functional product that is a modified nanoparticle with a positive first Zeta potential.

Regarding instant claim 76, the limitation of the modified nanoparticles comprising a positive first Zeta potential from about 1 to about 70 millivolts would have

been obvious over the nanoparticles taught by Rohrbaugh (Page 8, [0069]) in view of the positively charged nanoparticles taught by Alonso Fernandez (Page 4, claims 1-2).

Regarding instant claim 77, the limitation of the nanoparticles would have been obvious over the silicate nanoparticles (Page 5, [0046]) taught by Rohrbaugh, in view of the positively charged nanoparticles taught by Alonso Fernandez (Page 4, claims 1-2).

Regarding instant claim 81, the limitation of metal ions adsorbed onto the nanoparticles would have been obvious over the Cu^{+2} used on the surface of the nanoparticles as taught by Rohrbaugh (Page 8, [0069]).

Regarding instant claims 82-83, the limitation of the bonding of metal ions to the nanoparticles and the coupling of metal ions to the nanoparticles with an organofunctional silane would have been obvious over the surface treatment of silica nanoparticles with organosilanes, which are capable of attaching to the surface of the particles by a chemical bond or by a strong physical bond, as taught by Thunhorst (Page 6, [0094]).

Double Patenting

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claims 56, 69-71, and 84-87 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31, 36, 43, and 45 of copending Application No. 10/686,933 ('933 hereinafter).

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 31-32, 34, 36, 43, and 45 of '933 are drawn to an absorbent article comprising a porous substrate which further contains nanoparticles formed from silica, having an average size of from about 1 to about 50 nanometers, and a surface area of from about 50 to about 1000 square meters per gram. The difference is that the claims of '933 do not include the metal ion in addition to the silica nanoparticles for odor absorption.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the absorbent article comprising silica nanoparticles of '933 and produce the instant invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

17. Claims 56, 65-66, 69-71, and 84-87 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 6-9, 14-15, 17, 19-22, 25-26, 29-30, and 34-35 of U.S. Patent No. 7,141,518 ('518 hereinafter).

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-3, 6-9, 14-15, 17, 19-22, 25-26, 29-30, and 34-35 of '518 are drawn to a substrate comprising nanoparticles having a surface area of at least about 50 square meters per gram, the nanoparticles are modified with a metal ion and have a negative zeta potential prior to modification with the metal ion, the zeta potential of the modified nanoparticles is greater than the zeta potential of the nanoparticles prior to the modification, the substrate contains polyolefin fibers, a personal care product comprising the substrate and protective barrier clothing. The Specification of '518 discloses: "Laminates of breathable films and nonwoven fabrics also are considered to be within the teachings of this invention provided at least one of the layers contains absorbing, high surface area materials" (Col. 3, lines 27-30).

Since the instant application claims a film comprising high surface area silica nanoparticles with a metal ion, with zeta potential higher after the metal ion was adsorbed on the surface of the nanoparticle, used in a personal care product such as a diaper or adult incontinence product it is obvious over the claims of '518 and thus they are not patentably distinct over each other.

Conclusion

13. No claims are allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-

9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached at 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aradhana Sasan/
Examiner, Art Unit 1615

/MP WOODWARD/
Supervisory Patent Examiner, Art Unit 1615